

Read the Special Articles this month on "California's Danger from Oriental and Tropical Diseases."

CALIFORNIA ~~STATE~~ BOARD OF HEALTH.

MONTHLY BULLETIN

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TABLE OF CONTENTS.

	PAGE.
Part I. The Plague	77
1. Unpublished History	77
2. The Policy of the State Board of Health	88
3. The Public Health and Marine Hospital Service	91
4. The Future	94
[Part II. To be published in the next issue of the Bulletin.]	
5. Comments: A Californian's Judgment of the Future — Sir Patrick Manson's Forecast of the Tropical Diseases and the United States — "Pulling Together"	94
6. Department Reports for October, 1909 :	
(a) Vital Statistics for October	96
(b) Food and Drug Laboratory, Report for October	99
(c) Hygienic Laboratory Examinations for October	103
(d) Epidemiological Field Work for October	104

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REGULAR MEETINGS

The California State Board of Health meets regularly the first Saturday of each month, but the stated meetings of January, April, July, and October constitute the quarterly meetings required by law to be held at the Capitol of the State.

By courtesy of the University of California the Food and Drug Laboratory and the Hygienic Laboratory are located in University buildings at Berkeley, California.

Address all communications to the

SECRETARY, Sacramento, California.

NOVEMBER BULLETIN.

THE PLAGUE.

Unpublished History.

WILLIAM F. SNOW.

It is of little consequence now how Plague came into California. It is here. It is of little consequence now how San Francisco citizens responded to the great need of the hour and fought successfully one of the greatest and most ably planned sanitary battles of history. The agents of the disease have shifted their point of attack from the intelligently guarded bay cities to the foothills of the bay counties, and the need of the hour now is a thoughtful, effective, prompt response to the call for coöperation among landowners and tenants in fighting plague-infected ground-squirrels. The slogan has changed from "Keep the cover on your garbage can and starve the rat" to "Keep your family away from the ground-squirrel and join the crusade for its extermination."

No soldier is a good soldier until he studies the enemy and understands his part of the plan for attack. The Federal Government, the State Officers, the County Supervisors are coöperating in issuing instructions and supplies for a long campaign. It rests with the residents of the counties of Central California whether the brilliant efforts of San Francisco are to be duplicated and the health and commerce of California protected from serious damage.

The history of Plague on the Pacific coast is told with local color in the newspaper columns of the past ten years. But any one reading the hot words of affirmation and denial of its existence should bear in mind that medical science has made wonderful advances during these same ten years, and that we know a great deal more about this baffling disease now than we did when it first appeared on the coast. He should also remember that great advances have occurred in the education of the public in these matters. The masterly work of the Citizens' Committee in informing the San Francisco public of its grave danger without causing a panic, established the confidence of the world in the effectiveness of our methods of preventing the transference of the infection through the channels of commerce. It should not be necessary to repeat this lesson. Every thoughtful citizen is familiar with the popular truths about the disease. The rat-flea theory is a household phrase. The present squirrel investigations of our Federal scientists should lead naturally and without hesitancy or excitement to action by our citizens in promptly applying the information obtained. Only in this way may we through good management rather than good luck escape being eventually added to the long series of the vanquished history accords the plague bacillus.

There is no citizen who can not find time to read two books—De Foe's "Journal of the Plague" in London, and the Citizens' Health Committee report on "Eradicating Plague from San Francisco." These two stories describe the human side of Plague in the seventeenth and in the twentieth centuries.

Science has thus far given us no basis for believing that there is any reason why London had in 1665 more than 100,000 deaths, while San Francisco had in 1907 less than 200 cases, *except* that in 1907 Plague met "united authority with intelligent plans for defense" instead of ignorance and politics.

EXTRACTS FROM ANCIENT AND MODERN HISTORY OF PLAGUE.

[From De Foe's *Journal of the Plague in London*.]

"It was about the beginning of September, 1664, that I, among the rest of my neighbours, heard, in ordinary discourse, that the plague was returned again in Holland; for it had been very violent there, and particularly at Amsterdam and Rotterdam, in the year 1663, whither they say it was brought, some said from Italy, others from the Levant, among some goods which were brought home by their Turkey fleet; others said it was brought from Candia; others from Cyprus. It mattered not from whence it come; but all agreed, it was come into Holland again.

We had no such thing as printed newspapers in those days to spread rumours and reports of things; and to improve them by the invention of men as I have lived to see practised since. But such things as these were gathered from the letters of merchants and others who corresponded abroad, and from them was handed about by word of mouth only, so that things did not spread instantly over the whole nation as they do now. But it seems that the Government had a true account of it, and several councils were held about ways to prevent its coming over, but all was kept very private. Hence it was that this rumour died off again, and people began to forget it as a thing we were very little concerned in and that we hoped was not true, till the latter end of November or the beginning of December, 1664, when two men, said to be Frenchmen, died of the plague in Long-acre, or rather at the upper end of Drury-lane. The family they were in endeavoured to conceal it as much as possible, but as it had gotten some vent in the discourse of the neighbourhood, the Secretaries of State gat knowledge of it; and concerning themselves to inquire about it, in order to be certain of the truth, two physicians and a surgeon were ordered to go to the house and make inspection. This they did; and finding evident tokens of the sickness upon both the bodies that were dead, they gave their opinions publicly, that they died of the plague; whereupon it was given in to the parish-clerk, and he also returned them to the hall; and it was printed in the weekly bill of mortality in the usual manner, thus:—'Plague, 2. Parishes infected, 1.'

The people showed a great concern at this, and began to be alarmed all over the town, and the more, because in the last week in December, 1664, another man died in the same house, and of the same distemper: and then we were easy again for about six weeks, when none having died with any marks of infection, it was

[From the minutes of the California State Board of Health.]

EDITOR'S NOTE.—Regular minutes of the State Board of Health are not on file prior to April 1, 1903, when a new Board of Health was appointed.

said the distemper was gone; but after that, I think it was about the 12th of February, another died in another house, but in the same parish, and in the same manner.

This turned the people's eyes pretty much towards that end of the town; and the weekly bills showing an increase of burials in St. Giles's parish more than usual, it began to be suspected that the plague was among the people at that end of the town; and that many had died of it, though they had taken care to keep it as much from the knowledge of the public as possible; this possessed the heads of the people very much, and few cared to go through Drury-lane, or the other streets suspected, unless they had extraordinary business that obliged them to it.

However, all this went off again, and the weather proving cold, and the frost, which began in December, still continuing very severe, even till near the end of February, attended with sharp though moderate winds, the bills decreased again, and the City grew healthy, and everybody began to look upon the danger as good as over; only that still the burials in St. Giles's continued high: from the beginning of April especially, they stood at twenty-five each week, till the week from the 18th to the 25th, when there was buried in St. Giles's parish thirty, whereof two of the plague, and eight of the spotted fever, which was looked upon as the same thing; likewise the number that died of the spotted fever in the whole increased, being eight the week before, and twelve the week above-named.

This alarmed us all again, and terrible apprehensions were among the people, especially the weather being now changed and growing warm, and the summer being at hand: however, the next week there seemed to be some hopes again, the bills were low, the number of the dead in all was but 388, there was none of the plague, and but four of the spotted fever.

But the following week it returned again, and the distemper was spread into two or three other parishes, viz., St. Andrew's-Holborn, St. Clement's-Danes, and to the great affliction of the City, one died within the walls, in the parish of St. Mary-Wool-Church, that is to say, in Bear-binder-lane, near the Stocks Market; in all there was nine of the plague, and six of the spotted fever. It was, however, upon enquiry, found that this Frenchman, who died in Bear-binder-lane, was one who, having lived in Long-acre, near the infected houses, had removed for fear of the distemper, not knowing that he was already infected.

This was the beginning of May, yet the weather was temperate, variable, and cool enough, and the people had still some hopes. That which encouraged them was that the City was healthy. The whole ninety-seven parishes buried but fifty-four, and we began to hope, that as it was chiefly among the people at that end of the town, it might go no farther: and the rather because the next week, which was from the 9th of May to the 16th, there died but three, of which not one within the whole City or liberties; and St. Andrew's buried but fifteen, which was very low. 'Tis true St. Giles's buried two-and-thirty, but still, as there was but one of the plague, people began to be easy; the whole bill also was very low, for the week before the bill was but 347, and the week above mentioned but 343. We continued in these hopes for a few days; but it was but for a few, for the people were no

more to be deceived thus; they searched the houses, and found that the plague was really spread every way, and that many died of it every day: so that now all our extenuations abated, and it was no more to be concealed; nay, it quickly appeared that the infection had spread itself beyond all hopes of abatement; that in the parish of St. Giles's it was gotten into several streets, and several families lay all sick together; and, accordingly, in the weekly bill for the next week, the thing began to show itself. There was indeed but fourteen set down of the plague, but this was all knavery and collusion, for in St. Giles's parish they buried forty in all, whereof it was certain most of them died of the plague, though they were set down of other distempers; and though the number of all the burials were not increased above thirty-two, and the whole bill being but 385, yet there was fourteen of the spotted fever, as well as fourteen of the plague, and we took it for granted, upon the whole, that there was fifty died that week of the plague.

The next bill was from 23rd of May to the 30th, when the number of the plague was seventeen; but the burials in St. Giles's were fifty-three, a frightful number, of whom they set down but nine of the plague; but on an examination more strictly by the justices of the peace, and at the Lord Mayor's request, it was found there were twenty more, who were really dead of the plague in that parish, but had been set down of the spotted fever, or other distempers, besides others concealed."

* * * * *

"About June the Lord Mayor of London and the Court of Aldermen, as I have said, began more particularly to concern themselves for the regulation of the City."

* * * * *

"This hurry of the people was such for some weeks, that there was no getting at the Lord Mayor's door without exceeding difficulty, there was such pressing and crowding there to get passes and certificates of health, for such as travelled abroad; for, without these, there was no being admitted to pass through the towns upon the road, or to lodge in any inn: now, as there had none died in the City for all this time, my Lord Mayor gave certificates of health without any difficulty, to all those who lived in the ninety-seven parishes, and to those within the liberties too, for a while.

This hurry, I say, continued for some weeks, that is to say, all the month of May and June, and the more because it was rumoured that an order of the Government was to be issued out, to place turnpikes and barriers on the road, to prevent people's travelling; and that the towns on the road would not suffer people from London to pass, for fear of bringing the infection along with them, though neither of these rumours had any foundation but in the imagination, especially at first."

* * * * *

"It was now mid-July, and the plague, which had chiefly raged at the other end of the town, and, as I said before, in the parishes of St. Giles's, St. Andrew's-Holborn, and towards Westminster, now began to come eastward towards the part where I lived. It was to be observed, indeed, that it did not come straight on towards us; for the City, that is to say, within the walls, was indifferent healthy still; nor was it got then very much over the water into Southwark; for though there died that week 1,268 of all

New State Board of Health appointed.

April 2, 1903.

"Resolved, that the Secretary of this Board shall at once endeavor by all proper means to establish cordial and reciprocal relations between this Board and the different Local Boards in this State, the various State Boards of Health and the National Sanitary service;"

July 7, 1903.

"The following report of the Secretary was read and accepted:

*To the State Board of Health,
Sacramento, California.*

"DEAR SIR: I beg leave to submit to you the following report of the Conference of the State Boards of Health with the United States Public Health and Marine Hospital Service, to which I had the honor of being California's Representative.

"The Conference met in Washington, D. C., June 3d with 24 states represented. After the address by the Surgeon-General, who is by law the presiding officer, he called upon the states alphabetically to tell of their health conditions and laws

"California was first on the list represented. Knowing what was in the mind of each one, I at once took up the subject of plague. The interest was intense and the feeling strong, but not unkind, simply a determination that California must be truthful and show that every effort was being made to suppress the disease and keep it down. I told them plainly and frankly what we were doing, discussing the present and the future, saying nothing voluntarily of the past. They would not allow it to be entirely ignored. I answered questions and disclaimed responsibility, and as well and as quickly as I could drew them back to the present.

"I explained the work we were doing and that the State, United States, and City Boards were working in harmony under the general direction of the United

distempers whereof it might be supposed 900 died of the plague: yet there was but 28 in the whole City, within the walls."

* * * * *

"It remains to mention now what public measures were taken by the magistrates for the general safety, and to prevent the spreading of the distemper when it first broke out: I shall have frequent occasion to speak of the prudence of the magistrates, their charity, their vigilance for the poor, and for preserving good order, furnishing provisions, and the like, when the plague was increased as it afterwards was. But I am now upon the order and regulations they published for the government of infected families.

I mentioned above, shutting of houses up: and it is needful to say something particularly to that, for this part of the history of the plague is very melancholy; but the most grievous story must be told."

* * * * *

"The Justices of Peace for Middlesex, by direction of the Secretary of State, had begun to shut up houses in the parishes of St. Giles's-in-the-Fields, St. Martin's, St. Clement Danes, &c., and it was with good success; for in several streets, where the plague broke out, upon strict guarding the houses that were infected, and taking care to bury those that died immediately after they were known to be dead, the plague ceased in those streets. It was also observed, that the plague decreased sooner in those parishes, after they had been visited to the full, than it did in the parishes of Bishopsgate, Shoreditch, Aldgate, Whitechapel, Stepney, and others: the early care taken in that manner being a great means to the putting a check to it.

This shutting up of houses was a method first taken, as I understand, in the plague which happened in 1603, at the coming of King James I. to the crown; and the power of shutting people up in their own houses was granted by Act of Parliament, entitled,—'An act for the charitable Relief and Ordering of Persons infected with the Plague.'"

* * * * *

"It is true, that the locking up the doors of people's houses, and setting a watchman there night and day to prevent their stirring out, or any coming to them,—when, perhaps, the sound people in the family might have escaped, if they had been removed from the sick,—looked very hard and cruel; and many people perished in these miserable confinements, which 'tis reasonable to believe would not have been distempered if they had had liberty, though the plague was in the house; at which the people were very clamorous and uneasy at first, and several violences were committed, and injuries offered to the men who were set to watch the houses so shut up; also, several people broke out by force in many places, as I shall observe by and by. But it was a public good that justified the private mischief."

* * * * *

"An infected person came, and knocked at the door of a citizen's house, where they knew him very well; the servant let him in, and being told the master of the house was above, he ran up, and came into the room to them as the whole family was at supper. They began to rise up a little surprised, not knowing what the matter was, but he bid them sit still,—he only came to take his leave of them. They

States Marine Hospital Service. I asked for suggestions and promised to carry out any work that they thought would be of benefit.

"I had my credentials read, and in the name of the Governor invited them to come and see for themselves, California to pay the expenses of a committee."

"After all the states had been called the following resolutions were unanimously adopted:

"Whereas, the Conference of the State Boards of Health of the United States with the Public Health and Marine Hospital Service, having confidence in the earnest efforts and ability of the Governor and State Board of Health of the State of California acting in harmony with the Bureau of Public Health and Marine Hospital Service to thoroughly eradicate bubonic plague heretofore existing in the city of San Francisco, do resolve that in the judgment of this conference, so long as the present effective work is continued there is no need for quarantine restrictions of travel or traffic to or from that State."

Very truly yours,

(Signed) N. K. FOSTER."

August 4, 1903, memorandum from Secretary's notes.

".... visited San Francisco and conferred with President Regensburger and Dr. Blue. The cases of Plague in the Latin Quarter, and also the finding of an infected rat outside of Chinatown had caused alarm. We felt that the rat must go, and President Regensburger sent a communication to the City Board asking them to make war upon them. I also sent to all newspapers in the State a short article urging the cities and people to aid in the work."

August 12, 1903.

".... received word that a man had come from Pacheco, Contra Costa County, to San Francisco and had died of Plague. Thursday a. m. Dr. Blue, of the U. S. P. H. Service, and I went to Martinez where we conferred with county officials and health officer, and visited the place. We could get no history of his having been in San Francisco since July 4th, and in Martinez July 18th. He died August 9th.... We found, however, that July 3d a man came from San Francisco and died July 4th of what was supposed to be typhoid. The symptoms as portrayed make it seem very probable that this was Plague.... I quarantined the place and recommended that it be burned. This was done the next day."

September 12, 1903.

"I received word through Dr. Hanna of Plague in Pinole. On the 12th also there came to San Francisco from San Ramon a case of Plague, which died in the hospital a few hours later...."

September 17, 1903.

"I went to Contra Costa County to investigate the cause of death in ground-

asked him, 'Why, Mr. ———, where are you going?' 'Going!' says he; 'I have got the sickness, and shall die tomorrow night.' It is easy to believe, though not to describe, the consternation they were all in; the women and the man's daughters, which were but little girls, were frightened almost to death, and got up, one running out at one door, and one at another, some down stairs, and some up stairs, and getting together as well as they could, locked themselves into their chambers, and screamed out at the window for help, as if they had been frightened out of their wits. The master, more composed than they, though both frightened and provoked, was going to lay hands on him, and throw him down stairs, being in a passion; but then considering a little the condition of the man, and the danger of touching him, horror seized his mind, and he stood still like one astonished. The poor distempered man, all this while, being as well diseased in his brain as in his body, stood still like one amazed; at length he turns round, 'Ay,' says he, with all the seeming calmness imaginable, 'Is it so with you all? Are you all disturbed at me? Why then, I'll e'en go home and die there,' and so he goes immediately down stairs. The servant that had let him in goes down after him with a candle, but was afraid to go past him and open the door, so he stood on the stairs to see what he would do; the man went and opened the door, and went out and flung the door after him. It was some while before the family recovered the fright; but as no ill consequence attended, they have had occasion since to speak of it, you may be sure, with great satisfaction. Though the man was gone, it was some time, nay, as I heard, some days, before they recovered themselves of the hurry they were in; nor did they go up and down the house with any assurance, till they had burnt a great variety of fumes and perfumes in all the rooms, and made a great many smokes of pitch, of gunpowder, and of sulphur; all separately shifted, and washed their clothes, and the like. As to the poor man, whether he lived or died I do not remember."

"It was now the beginning of August, and the plague grew very violent and terrible in the place where I lived: and Dr. Heath coming to visit me, and finding that I ventured so often out in the streets, earnestly persuaded me to lock myself up and my family, and not to suffer any of us to go out of doors; to keep all our windows fast, shutters and curtains close, and never to open them; but first, to make a very strong smoke in the room, where the window or door was to be opened, with rosin and pitch, brimstone, or gunpowder, and the like; and we did this for some time: but as I had not lain in a store of provision for such a retreat, it was impossible that we could keep within doors entirely."

"And here I must observe again that this necessity of going out of our houses to buy provisions, was in a great measure the ruin of the whole city, for the people caught the distemper on those occasions, one of another; and even the provisions themselves were often tainted, at least I have great reason to believe so; and therefore I cannot say with satisfaction, what I know is repeated with great assurance, that the market people, and such as brought provisions to town, were never infected. I am certain the butchers of Whitechapel, where the greatest part of the flesh-meat was killed, were dreadfully

squirrels.... It was believed that the University had introduced a disease which was killing them off. This was an entire mistake, and it was feared there might be a connection between the Plague in the rodents and that in man. Boch, who died August 9th, had been hunting squirrels just before being taken sick, also the man at Pinole. The man from San Ramon worked on the railroad construction gang and could easily have been bitten by fleas from sick squirrels. I interviewed the Supervisors and got them to promise to get squirrels for experiment."

November 16, 1903.

".... learned that a Chinaman had died with symptoms suspicious of plague on the steamer 'J. D. Peters' on her trip down from Stockton a few days before. Went to Stockton and found he worked on a ranch down the river, had come to Stockton for one night, then down to Bouldin Island for one night, thence on to San Francisco, dying on the trip. Located the rooms in which he stopped and had them fumigated."

"On account of the Plague having shown itself in Contra Costa County, I wrote to General Wyman asking that the ships laying at anchor in the bay at Martinez be fumigated for the destruction of rats."

visited, and that at last to such a degree, that few of their shops were kept open; and those that remained of them killed their meat at Mile-End, and that way, and brought it to market upon horses."

"But we perceived the infection kept chiefly in the out-parishes, which being very populous, and fuller also of poor, the distemper found more to prey upon than in the City, as I shall observe afterward; we perceived, I say, the distemper to draw our way, viz., by the parishes of Clerkenwell, Cripplegate, Shoreditch, and Bishopsgate: which last two parishes joining to Aldgate, Whitechapel, and Stepney, the infection came at length to spread its utmost rage and violence in those parts, even when it abated at the western parishes, where it began."

"As they fled now out of the City, so I should observe that the Court removed early, viz., in the month of June, and went to Oxford, where it pleased God to preserve them; and the distemper did not, as I heard of, so much as touch them; for which I cannot say that I ever saw they showed any great token of thankfulness, and hardly anything of reformation, though they did not want being told that their crying vices might, without breach of charity, be said to have gone far in bringing that terrible judgment upon the whole nation."

"The apprehensions of the people were likewise strangely increased by the error of the times; in which, I think, the people, from what principle I cannot imagine, were more addicted to prophecies, and astrological conjurations, dreams, and old wives' tales, than ever they were before or since; whether this unhappy temper was originally raised by the follies of some people who got money by it, that is to say, by printing predictions and prognostications, I know not; but certain it is, books frightened them terribly; such as 'Lily's almanack'; 'Gadbury's alogical predictions,' 'Poor Robin's almanack,' and the like; also several pretended religious books: one, entitled—'Come out of her, my people, lest you be partaker of her plagues.'"

"On the other hand, it is incredible, and scarce to be imagined, how the posts of houses and corners of streets were plastered over with doctors' bills and papers of ignorant fellows quacking and tampering in physic, and inviting the people to come to them for remedies, which was generally set off with such flourishes, as these, viz. INFALLIBLE preventive pills against the plague. NEVER-FAILING preservatives against the infection. SOVEREIGN cordials against the corruption of the air. EXACT regulations for the conduct of the body in case of an infection. Anti-pestilential pills. INCOMPARABLE drink against the plague, never found out before. An

February 19, 1904.

".... six cases of plague having recently been reported, part of them of the pneumonic type, and among white people, some alarm existed, and the Conference was called together (consisting of S. F. City Board of Health, the Supervisors, Merchants' Association, U. S. Public Health Service, State Board of Health). It was decided to begin the use of Pasteur Rat Virus, and to make a systematic fight against rats."

February 24, 1904.

".... urgent call from Fresno They have a large Chinatown.... There is a disposition on the part of the municipal authorities to aid us, but they did not feel they should bear the expense of an autopsy in all cases. As we have no power to enforce the request, I got a promise to have all cases where the Health Officer was not fully satisfied examined."

March 1, 1904.

".... received a telephone message from Dr. Blue that a woman had died in Concord (Contra Costa County) of Plague and that they proposed to ship the remains to Oakland. I at once telegraphed to stop shipment. I started on first train found an American-born woman of French-Irish descent dead of Plague. She lived on a farm two miles from Concord, and there was no history of her having been away of late.... The attending physician, Dr. Neff, of Concord had suspected the nature of the disease. Examination of sections of glands proved the case to be the Plague, the third one in Contra Costa County. This case emphasized the necessity of a better health organization. For thirty-six hours after death no health officer was near this case and none had been during her illness...."

June 3, 1904.

(Following Secretary Foster's report before the annual Conference of State Boards of Health required to be called annually by the Surgeon-General of the Public Health and Marine Hospital Service.)

"Resolved, that this Conference expresses its confidence in the present methods in force in California in dealing with Plague, and that it extends its congratulations to the national, state and municipal authorities for their harmonious action in the control of this disease."

UNIVERSAL remedy for the plague. The ONLY TRUE plague water. The ROYAL ANTIDOTE against all kinds of infection; and such a number more, that I cannot reckon up, and if I could would fill a book of themselves to set them down."

* * * * *

"One thing I cannot omit here, and, indeed I thought it was extraordinary, at least, it seemed a remarkable hand of Divine justice, viz., that all the predictors, astrologers, fortune-tellers, and what they called cunning men, conjurors, and the like, calculators of nativities, and dreamers of dreams, and such people, were gone and vanished, not one of them was to be found. I am verily persuaded, that a great number of them fell in the heat of the calamity, having ventured to stay upon the prospect of getting great estates; and, indeed, their gain was but too great for a time, through the madness and folly of the people; but now they were silent, many of them went to their long home, not able to foretell their own fate, or to calculate their own nativities. Some have been critical enough to say, that every one of them died. I dare not affirm that; but this I must own, that I never heard of one of them that ever appeared after the calamity was over.

"But to return to my particular observations during this dreadful part of the visitation. I am now come, as I have said, to the month of September, which was the most dreadful of its kind, I believe, that ever London saw; for, by all the accounts which I have seen of the preceding visitations which have been in London, nothing has been like it; the number in the weekly bill amounting to almost 40,000, from the 22nd of August to the 26th of September, being but five weeks.

The particulars of the bills are as follows: viz.—

From Aug. the 22nd to the 29th...	7,496
To the 5th of September.....	8,252
To the 12th	7,690
To the 19th	8,297
To the 26th	6,460
	<hr/>
	38,195

This was a prodigious number of itself; but if I should add the reasons which I have to believe that this account was deficient, and how deficient it was, you would with me make no scruple to believe, there died above ten thousand a week for all those weeks, one week with another, and a proportion for several weeks both before and after. The confusion among the people, especially within the city, at that time, was inexpressible; the terror was so great at last, that the courage of the people appointed to carry away the dead began to fail them."

* * * * *

"It remains now that I should say something of the merciful part of this terrible judgment. The last week in September, the plague being come to its crisis, its fury began to assuage. I remember my friend, Dr. Heath, coming to see me the week before, told me he was sure that the violence of it would assuage in a few days; but when I saw the weekly bill of that which was the highest of the whole year, being 8,297 of all diseases, I upbraided him with it, and asked him what he had made his judgment from? His answer, however, was not so much to seek, as I thought it would have been. 'Look you,' says he, 'by the number which are at this time sick and infected, there should have been 20,000 dead the last week, instead of 8,000, if the inveterate

June 18, 1904.

".... a death in Oakland which seemed suspicious.... A boy 17 years of age had been hunting in Contra Costa County and in a few days was taken sick, developing a large bubo under his right arm, and dying in about a week (cultures were not made). Another boy, a younger brother, sickened in a few days and buboes developed in the groin. Fluid taken from them, however, did not show *Bacillus Pestis*... These cases are doubtful....but every care has been used to prevent the spread of the disease in case it may have been pest."

January 19, 1905.

"Since the last meeting the State Board has had one of its Chinatown employees, Dr. Medros, investigating the squirrel epidemic in Contra Costa County. His daily reports are on file and show that the squirrels over a large tract of country, beginning near Martinez, following the west range of hills round to Mt. Diablo and down to near Antioch, have already died. Where formerly there were thousands now there is scarcely one.

This epidemic has been watched by people, and it is currently believed that the State University had distributed virus which caused the disease. This is erroneous, but the nature of the disease is still unknown.... I have offered any price up to \$25 for a sick squirrel, but have been unable to procure one.... I would suggest the advisability to put a man or two another spring into the field to watch for squirrels—provided the disease continues.... Dr. Medros reports the rats have also disappeared. The fact that from this district came the three outside cases of Plague, and that it is situated on the shore of the bay, where deep-sea vessels lie at anchor and load with grain, makes the situation one of deep interest and anxiety."

The Board discussed this matter at length—"If the disease be of danger to human beings it brings before the State a grave situation. If harmless, it might be spread to rid the State of the great curse of squirrels."

April 1, 1905.

".... the members of the chinatown force were ordered discharged, as thirteen months have elapsed since the last case of Plague occurred in the State, and this is good reason to believe that it has been stamped out of existence.... Dr. Blue desired to continue as a matter of final precaution work in Chinatown until July 1st, and an interpreter and two physicians were retained for this purpose...."

May 15, 1905.

"Conference of State Boards of Health passed the following resolution:

"Whereas the eradication of Plague from California through the united and harmonious efforts of the United States

mortal contagion had been as it was two weeks ago; for then it ordinarily killed in two or three days, now not under eight or ten; and then not above one in five recovered; whereas, I have observed, that now not above two in five miscarry; and observe it from me, the next bill will decrease, and you will see many more people recover than used to do; for though a vast multitude are now everywhere infected, and as many every day fall sick, yet there will not so many die as there did, for the malignity of the distemper is abated; adding, that he began now to hope, nay, more than hope, that the infection had passed its crisis and was going off; and accordingly so it was, for the next week being, as I said, the last in September, the bill decreased almost 2,000.

It is true the plague was still at a frightful height, and the next bill was no less than 6,460, and the next to that, 5,720; but still my friend's observation was just, and it did appear the people did recover faster, and more in number than they used to do; and indeed, if it had not been so, what had been the condition of the city of London? for, according to my friend, there were not fewer than 60,000 people at that time infected, whereof, as above, 20,477 died, and near 40,000 recovered; whereas had it been as it was before, 50,000 of that number would very probably have died, if not more, and 50,000 more would have sickened; for, in a word, the whole mass of people began to sicken, and it looked as if none would escape.

But this remark of my friend's appeared more evident in a few weeks more, for the decrease went on, and another week in October it decreased 1,849, so that the number dead of the Plague was but 2,665; and the next week it decreased 1,413 more; and yet it was seen plainly that there was abundance of people sick, nay, abundance more than ordinary, and abundance fell sick every day, but as above, the malignity of the disease abated.

Such is the precipitant disposition of our people (whether it is so or not all over the world, that is none of my particular business to inquire, but I saw it apparently here), that as upon the first fright of the infection they shunned one another, and fled from one another's houses, and from the city, with an unaccountable, and, as I thought, unnecessary fright; so now, upon this notion spreading, viz., that the distemper was not so catching as formerly, and that if it was caught it was not so mortal, and seeing abundance of people who really fell sick, recover again daily, they took to such a precipitant courage, and grew so entirely regardless of themselves, and of the infection, that they made no more of the plague than of an ordinary fever, nor indeed so much. They not only went boldly into company with those who had tumours and carbuncles upon them that were running, and consequently contagious, but eat and drank with them; nay, into their houses to visit them; and even, as I was told, into their very chambers where they lay sick.

The physicians opposed this thoughtless humour of the people with all their might, and gave out printed directions, spreading them all over the city and suburbs, advising the people to continue reserved and to use still the utmost caution in their ordinary conduct, notwithstanding the decrease of the distemper; terrifying them with the danger of bringing a relapse upon the whole city, and telling them how such a relapse might be more fatal and dangerous than the whole visitation

Public Health and Marine Hospital Service, State and Local Boards of Health, by means of rat extermination and extensive sanitary improvements throughout the affected area, is an accomplished fact; therefore, be it

“Resolved, that this Conference of the United States Public Health and Marine Hospital Service with the State Boards of Health expresses its entire satisfaction with the methods used and the results obtained.”

May 17, 1906.

“.... met Dr. Currie and Dr. Blue of the U. S. P. H. and M. H. S. in Oakland to discuss the question of Plague among squirrels. These rodents have been dying off in Alameda, Contra Costa counties and elsewhere in the State, and as several human cases of Plague have occurred where the epizootic is worst, there is a possibility that the squirrels have the disease. As this is of national importance it should be investigated by the general government....”

“Governor Pardee at the request of our Board wrote General Wyman urging him to investigate it.”

August 14, 1907.

“A telegram from Dr. Hassler of San Francisco that five cases of Plague had been discovered....”

September 8, 1907.

“A case of plague occurred in Richmond....in a clean new house. Husband a dealer in hay and grain and probably had received some from San Francisco.”

September 13, 1907.

(Joint meeting of State and San Francisco Boards of Health.)

“Dr. Blue was present, having just been sent by General Wyman to take charge at the request of Mayor Taylor.”

September 19, 1907.

“Two Plague cases in Oakland.”

November 4, 1907.

“Secretary called to Martinez to meet the Supervisors and Dr. Long to induce them to extend the Plague prophylactic work to Contra Costa County....a spirit of co-operation was shown.”

that had been already; with many arguments and reasons to explain and prove that part to them, and which are too long to repeat here.

But it was all to no purpose; the audacious creatures were so possessed with the first joy, and so surprised with the satisfaction of seeing a vast decrease in the weekly bills, that they were impenetrable by any new terrors, and would not be persuaded, but that the bitterness of death was passed."

"This imprudent rash conduct cost a great many their lives, who had with great care and caution shut themselves up, and kept retired as it were from all mankind, and had by that means, under God's Providence, been preserved through all the heat of that infection.

This rash and foolish conduct, I say, of the people went so far that the ministers took notice to them of it at last, and laid before them both the folly and danger of it; and this checked it a little, so that they grew more cautious; but it had another effect which they could not check, for as the first rumour had spread, not over the city only, but into the country, it had the like effect, and the people were so tired with being so long from London, and so eager to come back, that they flocked to town without fear or forecast and began to show themselves in the streets, as if all the danger was over. It was indeed surprising to see it, for though there died still from 1,000 to 1,800 a week, yet the people flocked to town as if all had been well.

The consequence of this was, that the bills increased again 400 the very first week in November; and, if I might believe the physicians, there was above 3,000 fell sick that week, most of them new comers too."

* * * * *

"But the mercy of God was greater to the rest than we had reason to expect; for the malignity, as I have said, of the distemper was spent, the contagion was exhausted, and also the winter weather came on apace, and the air was clear and cold, with some sharp frosts; and this increasing still, most of those that had fallen sick recovered, and the health of the city began to return. There were, indeed, some returns of the distemper, even in the month of December, and the bills increased near 100, but it went off again, and so in a short while things began to return to their own channel. And wonderful it was to see how populous the city was again all on a sudden; so that a stranger could not miss the numbers that were lost, neither was there any miss of the inhabitants as to their dwellings; few or no empty houses were to be seen, or if there were some, there was no want of tenants for them."

* * * * *

"Some parts of England were now infected as violently as London had been; the cities of Norwich, Peterborough, Lincoln, Colchester, and other places were now visited; and the magistrates of London began to set rules for our conduct, as to corresponding with those cities. It is true, we could not pretend to forbid their people coming to London, because it was impossible to know them asunder; so, after many consultations, the Lord Mayor and court of Aldermen were obliged to drop it; all they could do, was to warn and caution the people, not to entertain it in their houses, or converse with any people, who they knew came from such infected places.

But they might as well have talked to the air, for the people of London thought

November 8, 1907.

(Conference with the Governor in San Francisco about Plague.)

"San Francisco is spending about \$30,000 per month; the government about \$8,000; the State about \$1,500.... Committee appointed to go to Washington to lay the case before the President, and urge that the national government take upon itself the work and expense,...as all feel it to be a national question."

January 4, 1908.

"Resolved, that this Board (State Board of Health) pledges its influence and authority to their utmost limits, even to the quarantine of negligent or refractory cities, towns or districts, in the enforcement of aggressive measures for the prevention and eradication of the Plague."

June 26, 1909.

(Annual meeting of State Board of Health.)

"A general discussion occurred on the significance of Plague-infected squirrels in Contra Costa County, during which Governor Gillett expressed his belief that the Board should take every precaution not only to prevent the spread of the infection to squirrels in other localities, but to stamp out the disease among the squirrels in the districts already involved."

July 31, 1909.

"The Secretary reported the new foci of Plague infection discovered in Contra Costa and Alameda counties. Also the death from Plague of the son of a hill farmer near Niles in Alameda County."

September 4, 1909.

"The Board again discussed ways and means of aiding in every way the great work of Detachment Commander Rucker of Dr. Blue's service. Santa Clara County noted as having plague squirrels."

October 2, 1909.

"Two more human cases of Plague.... both probably traceable to squirrel infection."

November 6, 1909.

"The Federal authorities have now found six counties....Alameda, Contra Costa, San Benito, Santa Clara, Stanislaus, and San Joaquin....having foci of Plague infection among squirrels. One wood-rat has proved to be infected. No rabbits or ground-owls have thus far shown infection."

themselves so plague-free now, that they were past all admonitions; they seemed to depend upon it, that the air was restored, and that the air was, like a man that had had the smallpox, not capable of being infected again. This revived that notion that the infection was all in the air, that there was no such thing as contagion from the sick people to the sound; and so strongly did this whimsy prevail among people, that they run altogether promiscuously, sick and well; not the Mohammedans who, prepossessed with the principle of predestination, value nothing of contagion, let it be in what it will, could be more obstinate than the people of London; that they were perfectly sound, and came out of the wholesome air, as we call it, into the city, made nothing of going into the same houses and chambers, nay, even into the same beds, with those that had the distemper upon them, and were not recovered.

Some, indeed, paid for their audacious boldness with the price of their lives; an infinite number fell sick, and the physicians had more work than ever, only with this difference, that more of their patients recovered, that is to say, they generally recovered; but certainly there were more people infected, and fell sick now, when there did not die above 1,000 or 1,200 in a week, than there was when there died 5,000 or 6,000 a week; so entirely negligent were the people at that time in the great and dangerous case of health and infection, and so ill were they able to take or accept of the advice of those who cautioned them for their good."

* * * * *

"A plague is a formidable enemy, and is armed with terrors that every man is not sufficiently fortified to resist, or prepared to stand the shock against."

* * * * *

"I must here take further notice that nothing was more fatal, to the inhabitants of this city, than the supine negligence of the people themselves, who, during the long notice, or warning they had of the visitation, yet made no provision for it."

We have cause for Thanksgiving for the past years. May we count on the people to make certain about November 25, 1910?

As early as August, 1903, the State Board of Health suspected Plague among the ground-squirrels of Contra Costa County. For two years the Federal Government has been making an exhaustive investigation of Plague among the rodents in California. The above extracts relating to Plague among the people and the squirrel population of the bay counties are evidence of the untiring efforts of Secretary Foster to control every possible focus of the disease.

The public and the press have had knowledge of these investigations. If Plague ever does become prevalent in California it will be, to repeat the words of De Foe, because of the "supine negligence of the people themselves, who, during the long notice, or warning, they had of the visitation yet made no provision for it."

THE POLICY OF THE STATE BOARD OF HEALTH.

WILLIAM F. SNOW.

The preceding quotations from the Secretary's journal, which is required by law to be kept and accepted for incorporation in the minutes of the Board at the regular meetings, demonstrate the policy of the Board to be one of using ".... its influence and authority to their utmost limits, even to the quarantine of negligent or refractory cities, towns, or districts, in the enforcement of aggressive measures for the prevention and eradication of Plague."

But Plague is only one disease that science is teaching us how to fight. It is the duty of the Board to maintain this fight all along the line. In so far as a man's life is valuable to the commonwealth it avails little to save him at great expense from Plague only to let him die from typhoid fever or malaria or smallpox, which may with certainty be controlled through public health administration; or even to sacrifice him to tuberculosis or one of the many other diseases against which we may, through coöperative effort, do much to defend ourselves.

The State Board of Health has been fortunate in its opportunity to turn over the direction of the Plague eradication work to the United States Government. The responsibility, however, for the control of all other diseases has remained with the Board, and the major part of its efforts have been directed, and must always be directed, against these other diseases.

The United States Government has been spending upwards of \$5,000 and the State Board \$1,000 per month during this year in the Plague war. The present field of battle is the squirrel-infested foothills of the Mount Diablo and Mount Hamilton divisions of the Coast Range. Many of the farmers see only squirrel hunters intent on killing as many squirrels as possible and shipping them in milk cans to some city market. They discount the explanations of these hunters about sick squirrels and bacteriological examinations by the Government as a blind covering some new commercial enterprise. Those who read the papers get the impression that the State Board of Health has undertaken to kill off *all* the squirrels in California.

Federal and State authorities are engaged in killing squirrels for only one purpose—that of answering two questions:

First—Is the Plague among the squirrels caused by the same bacilli which produce Bubonic Plague in man? If so, how may these bacilli be transferred from the sick squirrels to man?

Second—What portion of the squirrel population of the State is now diseased with this plague?

When these two questions, together with many minor ones, are answered, the Board of Health will act in accordance with the law by instructing city and county Boards of Health to institute such administrative measures as may be necessary to protect the health of the citizens of the State.

It is worth the \$100,000 and more that these investigations have thus far cost California and the United States to know beyond the possibility of doubt wherein our danger lies. All the original work of the laboratory and the field thus far points to an affirmative answer to the first question, but suggests the possibility of some chain of circumstances not yet understood which prevents the ready transmission of Plague from

squirrel to man. The answer to the second question thus far involves portions of six counties, *i. e.*, Contra Costa, Alameda, Santa Clara, San Benito, Stanislaus, San Joaquin.

To these counties the State Board has sent communications urging their active participation in the work of investigation and education, and recommending a systematic extermination of squirrels both as an economic and a health measure. It is not the duty of the State Board of Health to exterminate squirrels, but to protect each county from invasions of disease from other counties, and to aid its citizens in every effort they may personally make to combat diseases already within their borders.

THE GOVERNOR.

California is fortunate in having a Governor who sees the Plague situation clearly and acts fearlessly. Governor Gillett has been a frequent and interested consultant in the work of the State Board. In the many difficult situations that have presented themselves in the prosecution of the squirrel investigation work he has shown excellent administrative judgment and tact. It is fitting that the Board of Health should emphasize this strong support of the Governor, for without it the effectiveness of the work would be largely defeated.

THE CITIZENS.

It is right and in the interests of good government for the Federal and State authorities to make available for every citizen the knowledge necessary to prevent the spread of Plague. It is economical for the United States Government to detail its most experienced scientists and administrative officers to direct the fight against Plague. But it remains for the citizens themselves to do the fighting.

THE REST OF THE UNITED STATES.

If the citizens fail in their duty the world without and the rest of the United States within our commonwealth will not hesitate to use the powerful weapon of travel- and commercial- quarantine. Since the epoch-making sanitary battle of San Francisco the world believes in us, but the world knows human nature and is taking no chances on the supposition that because San Francisco is located in California therefore all the citizens of the State must be as clear-headed and thorough-going as the influential leaders in that city have been.

THE PRESS.

The local newspapers and Associated Press can, by their tremendous influence, assure us of public confidence at home and abroad, if their reports are honestly made concerning both favorable and unfavorable phases of the Plague situation to be unfolded in the years to come.

The history of the Plague shows that a policy of concealment has done nothing more than temporarily mislead the local public, for check-lists made from the United States Weekly Public Health Reports, from the monthly Consular Reports, and from the many private sources of authentic information make permanent concealment of facts an impossibility.

That the editors of California are now awake to the necessity of

reporting in popular phraseology the progress of Plague on the Pacific coast is shown by the following newspaper headlines: "Plague Danger in Coast Range"—"Keenly Alive to Plague Dangers"—"Squirrels Keep Alive Bubonic Plague Germs"—"Squirrels are Cause of Spread of Dread Plague"—"Another Human Plague Case"—"Plague Area is Getting Larger"—"Plague Investigators in the Altamont Hills"—"State Menaced by Squirrels"—"Board of Health Finds Plague in Contra Costa County"—"Fight Against Disease-stricken Squirrels a Hard One"—"Interesting Facts Relative to Diseased Rodents"—"State Board of Health Stirs up Officers of Infected Counties"—"Kill Those Squirrels! Poison 'Em! Uncle Sam Says Every Last One Must be Exterminated"—"Free Poison to Kill Squirrels; Make Application to Inspector at Your Nearest Postoffice on the Dates Below"—"Gets Plague From Eating Squirrels."

These are but types, each the introduction to an accurate statement of facts, which have been often commented on in such helpful editorials as these:

EXTERMINATING THE GROUND-SQUIRREL.

The Sacramento *Bee* has expressed, editorially, what every citizen of the Golden State must feel—that the ground-squirrel and kindred rodents must be exterminated. As agents of destruction of crops, of lawns, and of roads they are a serious pest, but as carriers of Bubonic Plague they are a potent menace to the health of the State's population. And now, at a cost of several human lives, the attention of the medical world is aroused and throughout California comes the slogan, "Kill the ground-squirrel and its brethren."

"The occurrence of a case of Plague in Alameda County, ten miles east of Sunol, from the bite of an infected ground-squirrel," says the *Bee*, "is a warning to all California. Several such human cases have occurred in Contra Costa County from the same cause, and there was also a case of Plague in Los Angeles from the bite of a ground-squirrel a year ago. No one knows how that Los Angeles squirrel got the infection, or where the creature came from, and no other case of Plague has been reported in this State south of San Francisco or north of the bay counties."

"A general war of extermination should be waged in California against ground-squirrels, gophers, rats, and mice. Every Board of Supervisors should join in the work, under the provisions of the new State law making squirrel-infected premises a public nuisance. As a matter of public economy, the destruction of these animals by poison and other means is worth much more than its cost, and no man has a right to allow squirrels or gophers to infest his premises, thus maintaining a dangerous public nuisance, as the pests spread to adjoining lands. They are especially destructive in orchards."

"It is worse than foolish for any supervisor or other person to attempt to decry the warning and advice of health officers and Plague experts in this regard. The danger of Plague is not a thing to be ignored, hushed up or belittled. The spread of Plague infection to the ground-squirrels, gophers or rats in any county tends immediately to lower the value of land and all other fixed property in that county."

"A ranch or farm on which Plague squirrels establish themselves is unsalable at any price until they are destroyed and all danger from them has passed away. Their fleas are capable of spreading the disease to rats, rabbits, mice, and human beings, and perhaps also to cats, dogs, and other animals. Recent investigations have shown that ground-squirrels harbor many fleas, and that these fleas, although of a different species from the common house flea, will bite other animals and mankind."

"The press of the State can do good service in this matter by dwelling upon the danger of handling ground-squirrels in any way, using them for food, keeping them as pets or carrying or shipping them in any manner from place to place, which the law forbids."—*Bakersfield Californian*, August 16, 1909.

UNITED STATES INSPECTORS VISIT SUISUN.

".... While at no time in the history of this county (Solano) has any disease appeared which resembled that of Plague...."

".... On the other hand, the people of this section should feel grateful for the attention shown, as 'an ounce of prevention is worth a pound of cure.'"—*Suisun Republican*, October 22, 1909.

"The report that Bubonic Plague exists among the squirrels of Contra Costa need cause no general alarm among our people. For months a representative of the State Board of Health has been conducting experiments.... Steps will be immediately taken to exterminate the pests, and when this is done Contra Costa will doubtless be given a clean bill of health...."—*Martinez Standard*, July 3, 1909.

A PLAGUE UPON RODENTS.

A case of Plague has developed in Alameda County contracted from ground-squirrels. If some ground-squirrels have it, so will others. Kill them. Pass the word along. Kill them, but do not touch them. They are migratory and may easily spread the disease from county to county. It is not something to get frightened over, but rather to be vigilant about. Any relaxation of effort will mean disaster. Keep at it. It is the only way. So long as there is a rat or a ground-squirrel in the State, so long will there be some danger from Asiatic Plague.—*California Weekly* (S. F.), August 13, 1909.

We need have no fear of pestilence so long as the people heed such advice from the press.

There is no more hopeful sign of California's future than this evidence of her determination to train her citizens to effectively fight the new and strange diseases which are to be brought to her ports in increasing numbers as her trade with the Orient grows.

THE PUBLIC HEALTH AND MARINE HOSPITAL SERVICE.

WILLIAM F. SNOW.

The United States Government has rendered California no greater service than to detail for the Plague work Dr. Rupert Blue and his division chiefs, Dr. C. W. Rucker and Dr. G. W. McCoy. These three men came with the confidence of the nation in their integrity and ability, and have remained to win the esteem and cordial support of the entire State. In all the difficult administrative, field, and laboratory work through which they have had to pioneer their way, steadfastness of purpose and tactful regard for the public comfort and commerce have been manifest. It is true that the citizens have given loyal support, but this has been because these men have proved themselves worthy of the leadership accorded them.

Much is being written about the need for a National Department of Health. Californians are experiencing a practical demonstration of this need. It is not logical that as a nation we should place the strong barrier of the Public Health and Marine Hospital Service across the gateways of our country, and then utilize this service only to keep out a few diseases that are not now within our borders.

The many interstate problems of water supply and sewage disposal, milk traffic, reciprocity in the care of consumptives, and the like, must of necessity be solved through Federal control.

California's experience would indicate that it is only necessary to amplify the existing Public Health and Marine Hospital Service to have this control an accomplished fact.

Commanding Surgeon Blue's Letter.

UNITED STATES PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,
OFFICE OF MEDICAL OFFICER IN COMMAND,
401 FILLMORE STREET,

SAN FRANCISCO, October 30, 1909.

CIRCULAR LETTER.

City and County Health Officers, physicians, and the general public are hereby informed that the investigations of the Federal and State Health Officers have shown the existence of an extensive epizootic of bubonic plague among the ground-squirrels of Contra Costa, Alameda, San Joaquin, Santa Clara, Stanislaus and San Benito Counties. This infection covers a considerable area in which human cases are liable to occur at any time. It is extremely important that these be recognized as early as possible after the onset of the disease, so that prompt treatment (in the first 24

or 48 hours) may be instituted. In this way only can the high mortality be reduced. Every physician, therefore, should be on his guard and notify the State and Federal health authorities at San Francisco, by wire or telephone.

Whenever a suspicious case comes under observation curative serum will be forwarded promptly for the treatment of such cases and the services of an expert diagnostician given without cost to the physician or his patient. Precautionary measures should be taken to prevent the further spread of the infection. Such measures, however, should be instituted by those familiar with the disease and skilled in its prevention and treatment. For the guidance of those in charge of the Campaign of Eradication, every focus of infection should be discovered and recorded at the earliest possible date. In order that those who come in contact with the disease may have the data necessary to make a diagnosis, a paper by Passed Assistant Surgeon G. W. McCoy on "The Diagnosis of Plague" is transmitted herewith.

The coöperation of the general public in the extermination of ground-squirrels and the discovery of those places in which plague exists among them is earnestly requested. Reports of localities in which squirrels are dying or diseased will be investigated as promptly as possible. It is the purpose of the Federal Health authorities to render every aid at their command in attacking this very important problem.

Respectfully,

[Signed]

RUPERT BLUE,
Surgeon, Commanding.

Telephone Park 878.

The Diagnosis of Plague.

The following paper was written by Passed Assistant Surgeon George W. McCoy, who has been chief of the laboratory division of the Plague work in California:

This paper makes no pretense whatever at the presentation of any new data or new facts in connection with the diagnosis of plague. It is simply desired to call attention to a few of the cardinal symptoms of this disease which has become a matter of so much importance in California.

The widespread epizootic of plague among the ground-squirrels of this State leads to the suspicion that possibly cases which are not recognized occur among the human population. This is particularly true in view of the fact that practically all of the cases of plague occurring outside of the large cities have fallen into the hands of two practitioners, who have learned from experience that it is advisable to consider the possibility of this disease when acute glandular affections are encountered.

It seems scarcely necessary to point out that there are three common classes of plague cases: the bubonic (which often becomes septicæmic), the primary septicæmic, and the pneumonic.

The great majority of cases of plague are of the bubonic type, and this type alone will be considered somewhat in detail here. This is, as it fortunately happens, the type that offers the least difficulty in diagnosis. So far as is known, all of the cases of plague in man that have been derived from squirrel infection have been of this (the bubonic) type. Of course the number of such cases is still comparatively small, and it is not unlikely that in time we shall have in man both pneumonic and primary septicæmic plague of squirrel origin.

(a) Prepared by the direction of Surgeon Rupert Blue, Commanding Plague Suppressive Measures, United States Public Health and Marine Hospital Service.

The symptoms of plague may be briefly described as follows:

Premonitory Symptoms.

These are usually absent, occasionally headache and malaise precede for a day or two the onset of more pronounced symptoms, but in the majority of cases the disease begins suddenly.

Onset.

A chill, which is followed by headache and vomiting, is a very common occurrence. The temperature rises rapidly and will usually be 103° F. or over when the case first comes under observation. Prostration is usually marked and delirium is apt to be an early symptom. These symptoms are common to the onset of many infectious diseases, but in a locality where plague is one of the diseases that must be considered in making a diagnosis they should put the physician on his guard.

The Bubo.

After the above symptoms have persisted for a day or two, or occasionally almost synchronous with their onset, one of the superficial lymphatic glands will be found to be enlarged and tender. It is a peculiar fact, which may merely be a coincidence, that thus far in nearly all of the human cases derived from squirrels the primary bubo has been located in the axillary region. Any case presenting the symptoms of onset mentioned above or with fever and headache alone, which is soon followed by an enlarged gland, demands the most careful examination in order to exclude plague. The fever is apt to remit about the third or fourth day. This occurrence is without

any special significance as to the outcome of the case. It usually rises again, and if the infection has spread to the blood stream lymphatic glands other than those first involved will be found to be enlarged and tender. The pulse is usually rapid and very frequently, even early in the disease, it is quite feeble. An eruption, usually petechial in character, may develop any time after the second day. This eruption is by no means constant, and *its absence has no significance* whatever in making a diagnosis.

The glands first involved rapidly increase in size, and associated with this there is an infiltration of the periglandular tissues so that the outline of the lymph node is lost and a rather diffuse swelling results, which shades off into the surrounding tissues. If the case goes on to recovery the glands generally suppurate and the resulting abscess eventually opens on the surface. It must be borne in mind that in many cases after suppuration has supervened it is too late to make a positive diagnosis by puncture, as the plague bacillus will have disappeared by this time. The disappearance of the bacillus is usually attributed to the presence of other organisms, but I am disposed to believe that it is largely due to the activities of the defensive agencies of the body.

Aside from the symptoms mentioned one usually finds a marked congestion of the conjunctiva and the tongue is generally coated. These latter symptoms are regarded as of much importance by many clinicians, but as they are common to so many diseases they do not seem to me to be of great importance or value.

When a case presenting the symptoms that have been mentioned comes under observation it is important that a diagnosis should be made at once by microscopical and cultural investigations. It is not always a simple matter to puncture a gland and withdraw from it a little of the gland fluid which may be submitted to the tests mentioned. However, it can usually be done and a positive diagnosis be made.

Atypical Cases of Plague.

These are *not common* and are of course the cases most apt to escape detection. Many of them have been mistaken for typhoid fever, typhus fever, "septicæmia," or gland infections due to the ordinary pyogenic micro-organisms. We have more than once seen what was regarded as a venereal bubo prove to be a plague bubo.

The pneumonic form of the disease should always be borne in mind in all cases of pneumonia. Atypical symptoms such as profound prostration or a weak, thready pulse should lead to an investigation of the bloody sputum.

The most important point to remember is that in a case in which suspicion arises in the practitioner's mind that the case might be one of plague, it is most important to have the gland punctured by an expert, and the material obtained submitted to bacteriological examination. Cases of plague are not overlooked because the physician into whose hands they come is unable to make the diagnosis, but simply because he does not think of this disease.

The question has been asked on several occasions when I have been called to see suspicious cases which upon bacteriological examination proved negative for plague as to whether the practitioner was justified in asking for expert assistance in the diagnosis of such cases. The reply to this question should be as follows: Any case of an acute febrile disease in which the symptoms do not clear up within a few days or definitely indicate the nature of the malady should be submitted to a careful examination, with a view to excluding plague, and certainly *any acute febrile cases in which there is involvement of the lymphatic glands*, without some very evident local point of infection should be regarded with suspicion. It is safe to say that in the majority of cases which confuse the practitioner nothing short of the puncture of the gland and a microscopical and bacteriological examination of the material obtained will suffice to clear up the diagnosis. I may say that I have never been sent to investigate a case in which without a bacteriological examination or an autopsy have I been able to certainly exclude plague.

The most important features of two cases that have recently come under observation will be briefly related here. Both were in all probability derived from squirrel infection.

CASE 1. A boy thirteen years of age had been squirrel shooting and had succeeded in bagging a number of the rodents. A little less than a week after the hunting trip he became ill with headache, fever and vomiting; two days later a painful swelling developed in the left axilla. The swollen gland was excised, the temperature fell somewhat and the case was regarded as an ordinary infection until two days later when all of the superficial glands were enlarged. When one of these secondary glands was submitted to laboratory examination the diagnosis of plague was readily made.

The case died after an illness of sixteen days.

CASE 2. This was in the person of a five-year-old child. Here again the onset was with fever and headache. An axillary gland became involved simultaneously with the onset of the subjective symptoms. The gland was punctured within eight hours after the case was first seen by a physician and a diagnosis was made as soon as the smear preparation was placed under the microscope.

The gland was excised the next day and vigorous treatment with anti-plague serum instituted. The patient made a prompt recovery.

THE FUTURE.

WILLIAM F. SNOW.

No one can forecast the future of Plague in the United States. There are many reasons for believing that science has discovered enough about this disease to prevent such devastating inroads as are annually manifested in India and elsewhere. Yet much remains to be done. If the people wish to avoid a personal encounter with this disease, they must carry the war into the enemy's territory. This means into the laboratory, for the enemy is microscopic. Money and the framing of necessary laws must be entrusted to experienced, scientific leaders. These laws must be conscientiously obeyed. The homemade sanitarian must reverse the telescope and study the battlefields or go to the Orient and see the enemy in action massacring the people by thousands before he publicly expresses his contempt for an unseen foe and for visionary scientists.

The experimental work on the serum-therapy of Plague must be pushed through to the unquestioned success accorded diphtheria antitoxin. The invaluable Philippine laboratories must be the sentry posts of San Francisco's defense.

COMMENTS.

A CALIFORNIAN'S JUDGMENT OF THE FUTURE.

Dr. Herbert Gunn is a physician of experience in dealing with tropical diseases. He has written an article in reference to "Hookworm" disease, which will be included in Part II of these articles on tropical and oriental diseases.

"In regard to the occurrence of *Uncinariasis* [Hookworm] here, I should like to repeat what I have said before the San Francisco Medical Society, the State Society, and several other societies, also several times in medical print, and that is, if the disease has not already gained a foothold in California it will eventually do so, and centers of infection will be found. It may be years before this can be demonstrated, as a locality will never be found to be endemic until the parasite infests it in great numbers."

Sir Patrick Manson's Forecast of Tropical Diseases and the United States.

" So far as I know, there are only two or three diseases that are, strictly speaking, confined to warm climates, that is to say, that can neither be acquired in, nor be successfully imported into, nor thrive in, colder climates. These two or three—I might call them non-exportable diseases—are due to 'germs' that live on the surface of the body and are therefore exposed to climatic influences. . . .

"One of the most important factors in the diffusion of disease is the intercommunication of peoples, whether this be by trade, by travel, by pilgrimages, by wars or otherwise. So long as a community remains isolated or cut off from the rest of the world, so long it is spared many of the diseases of the rest of mankind! In primitive times there was nothing more effective than geographical isolation, but when men began to navigate the seas and to make roads over or through the hills, the protection afforded by these natural barriers was broken down, and diseases hitherto localized became diffused and almost general. Thus cholera and smallpox, and doubtless many other deadly diseases of the Old World were carried to the new, and to a less extent the diseases of the New World were carried to the old. . . . You are about to enter on the great undertaking of opening the Panama Canal. You are in full possession of that great outstanding etiological fact that most tropical disease is insect-borne. I sincerely hope the authorities appreciate this. It is the crux of the situation. It means treasure, it means more than this, it means thousands of human lives; it means success or failure. And when you have made this canal, nay before and while you are making this canal, remember Asia. Do not reciprocate her gifts to you of Cholera and Plague by a return gift in the form of Yellow Fever."

“PULLING TOGETHER.”

The prevention of the introduction of tropical diseases into California depends on the extent to which our citizens may be roused to effective “pulling together” in the fight against them. The iron in the reinforced concrete is expensive, but we live in an earthquake country. The steam in the fire engine is a large factor in our tax levy, but our buildings are not all fireproof. The public health laboratory for the study of disease and the inspection machinery necessary to apply the results of the laboratory work are costly, but the commerce and welfare of our country demand the expenditure. The best men and the best equipment are the cheapest in Public Health work as in any other business. The owner of a great business enterprise selects for his manager some one who has made good, and then advances his salary as his value to the enterprise increases. He does not change managers with each change of political administration. This is sound business policy. It is just as sound and has proved just as productive of good returns in the protection of our lives as in the protection of our commerce.

A partial list of California's County Health Officers is printed in this Bulletin. It is the duty of every citizen to report all matters concerning disease in his community to his Health Officer. Outside the incorporated cities the County Health Officer is the official to receive this information. The first great essential in “pulling together” for health protection is to fulfill this duty.

DEPARTMENT OF VITAL STATISTICS.

GEORGE D. LESLIE, STATISTICIAN.

VITAL STATISTICS FOR OCTOBER.

Marriages.—The marriages reported for October number 2,010, as compared with 1,950 for the same month last year. For an estimated State population of 2,037,929, the October total represents an annual rate of 11.6, against 12.4 for September.

The October totals were highest for the following counties: Los Angeles, 401; San Francisco, 381; Alameda, 253; Sacramento, 97; Santa Clara, 72; Orange, 68; Fresno, 64, and Marin, 55.

The aggregate for San Francisco and the other bay counties (Alameda, Contra Costa, Marin, and San Mateo) was 728.

Births.—For October there were reported 2,811 living births, representing an annual birth rate of 16.2 per 1,000 population, or the same as for the preceding month. The total for the corresponding month last year was 2,448.

The totals were highest for the following counties: Los Angeles, 610; San Francisco, 582; Alameda, 327; Fresno, 120; Santa Clara, 104; Sacramento, 93, and San Bernardino, 57.

Altogether 1,644 births were registered in the twenty-six freeholders' charter cities, the leading cities being as follows: San Francisco, 582; Los Angeles, 419; Oakland, 159; Berkeley, 89; Sacramento, 65; Fresno, 41; San Jose, 38; San Diego, 33, and Alameda, 31.

The aggregate for San Francisco and the transbay cities (Alameda, Berkeley, and Oakland) was 861, and for San Francisco and the other bay counties was 1,010. Similarly, the total for Los Angeles and neighboring chartered cities (Long Beach, Pasadena, and Santa Monica) was 470, and for the entire county was 610.

Deaths.—Exclusive of stillbirths, altogether 2,545 deaths were reported for October, this number including 179 delayed certificates for deaths in September or earlier months. The 2,545 deaths give an annual death rate of 14.7 for October, against 14.0 for the month before. The corresponding total for the same month last year was 2,410.

The October death totals were highest for the following counties: San Francisco, 518; Los Angeles, 456; Alameda, 293; Santa Clara, 111; Sacramento, 109; Fresno and San Diego, each 77; San Bernardino, 72; San Joaquin, 68; and Sonoma, 55.

There were altogether 1,446 deaths in the twenty-six chartered cities, the highest totals being as follows: San Francisco, 518; Los Angeles, 301; Oakland, 145; Sacramento, 70; San Diego, 63; San Jose, 37; Berkeley, 35; Fresno, 34; Stockton, 33; and Alameda, 31.

The aggregate for the urban district (San Francisco and the trans-bay cities) was 729, and for the entire metropolitan area (San Francisco and the other bay counties) was 877. Similarly, the total for Los Angeles and neighboring chartered cities was 345, and for the whole county was 456.

Causes of Death.—For October there were reported 391 deaths, or 15.4 per cent of all, from diseases of the circulatory system, and 375, or 14.7 per cent, from various forms of tuberculosis, heart disease thus leading tuberculosis as in previous months.

Other notable causes of death in October were as follows: Diseases of the digestive system, 310; violence, 263; diseases of the respiratory system, 212; diseases of the nervous system, 205; Bright's disease and nephritis, 154; cancer, 135; and epidemic diseases, 127.

Typhoid fever, as usual, led among epidemic diseases with 47 deaths, against 19 for diphtheria and croup, 17 for malarial fever, 14 for whooping-cough, 12 for measles, and 18 for all other epidemic diseases.

The 47 deaths from typhoid fever occurred in the following counties: San Francisco, 6; Fresno, 5; Alameda, Los Angeles, and Sacramento, each 4; Butte, 3; Contra Costa, San Bernardino, San Joaquin, Sonoma, Tehama, and Tulare, each 2; and Inyo, Kern, Kings, Marin, Orange, Santa Clara, Siskiyou, Solano, and Ventura, 1 each.

Further particulars appear in the following table:

Deaths from Certain Principal Causes, with Proportion per 1,000 Total Deaths for Current and Preceding Month, for California: October.

Cause of Death.	Deaths: October.	Proportion per 1,000.	
		October.	September.
ALL CAUSES.....	2,545	1,000.0	1,000.0
Typhoid fever.....	47	18.5	24.6
Malarial fever.....	17	6.7	11.9
Measles.....	12	4.7	2.1
Scarlet fever.....	6	2.4	2.5
Whooping-cough.....	14	5.5	10.2
Diphtheria and croup.....	19	7.5	4.2
Influenza.....	4	1.6	-----
Other epidemic diseases.....	8	3.1	3.4
Tuberculosis of lungs.....	332	130.4	120.7
Tuberculosis of other organs.....	43	16.9	18.3
Cancer.....	135	53.0	59.1
Other general diseases.....	135	53.0	36.6
Meningitis.....	35	13.8	11.5
Other diseases of nervous system.....	170	66.8	74.0
Diseases of circulatory system.....	391	153.6	157.2
Pneumonia and broncho-pneumonia.....	150	58.9	40.0
Other diseases of respiratory system.....	62	24.4	21.2
Diarrhea and enteritis, under 2 years.....	122	47.9	49.7
Diarrhea and enteritis, 2 years and over.....	29	11.4	14.4
Other diseases of digestive system.....	159	62.5	57.0
Bright's disease and nephritis.....	154	60.5	57.0
Childbirth.....	27	10.6	10.2
Diseases of early infancy.....	76	29.9	35.3
Suicide.....	49	19.3	19.1
Other violence.....	214	84.1	103.7
All other causes.....	135	53.0	56.1

Geographic Divisions—Data for geographic divisions, including the metropolitan area, or “Greater San Francisco,” are as follows:

Deaths from Main Classes of Diseases, for Geographic Divisions: October.

Geographic Division.	DEATHS: OCTOBER.										
	All Causes.....	Epidemic Diseases....	Tuberculosis (All Forms)	Cancer	Diseases of Nervous System.....	Diseases of Circulatory System	Diseases of Respiratory System	Diseases of Digestive System.....	Bright's Disease and Nephritis.....	Violence	All Other Causes.....
THE STATE	2,545	127	375	135	205	391	212	310	154	263	373
<i>Northern California</i>	313	17	29	16	41	51	18	42	11	36	52
Coast counties ..	147	3	13	10	24	27	12	20	3	14	21
Interior counties	166	14	16	6	17	24	6	22	8	22	31
<i>Central California</i>	1,516	72	194	82	102	236	147	192	100	166	225
San Francisco ..	518	20	76	32	22	90	61	67	23	60	67
Other bay counties	359	14	29	22	33	56	28	42	29	37	69
Coast counties ..	181	5	29	11	10	28	18	21	13	23	23
Interior counties	458	33	60	17	37	62	40	62	35	46	66
<i>Southern California</i>	716	38	152	37	62	104	47	76	43	61	96
Los Angeles	456	24	96	25	39	58	31	53	33	34	63
Other counties ..	260	14	56	12	23	46	16	23	10	27	33
<i>Northern and Central California</i> ..	1,829	89	223	98	143	287	165	234	111	202	277
Metropolitan area	877	34	105	54	55	146	89	109	52	97	136
Rural counties ..	952	55	118	44	88	141	76	125	59	105	141

DEPARTMENT OF PURE FOODS AND DRUGS.

PROFESSOR M. E. JAFFA, DIRECTOR.

Mr. J. E. Gardner, attorney for the State Board of Health, has prepared the following statement with reference to guaranties, and the data will repay careful study by all dealers and others interested in the operation of the Pure Food and Drug Laws:

CONCERNING GUARANTIES.

Since there seems to be some confusion in the minds of manufacturers and dealers as to the matter of guaranties, it has been deemed wise to issue a statement in detail, which, it is hoped, will make the matter too plain for misunderstanding. In addition to this statement, persons interested are urged carefully to read the provisions of the acts and the regulations.

Guaranties, under the California Foods and Drugs Act, are of two kinds, general and specific.

1. The *general guaranty* must be filed with the Secretary of Agriculture, in Washington, D. C. It must refer to the California law and must be in the following form:

"I (we), the undersigned, do hereby guarantee that the articles of foods, liquors, and drugs, manufactured, produced, prepared, compounded, packed, distributed, or sold by me (us) (specifying the same as fully as possible), are not adulterated or misbranded within the meaning of the Food and Drugs Act, June 30, 1906, and are not adulterated, mislabeled, or misbranded, within the meaning of the California Pure Foods Act, March 11, 1907, or the California Pure Drugs Act, March 11, 1907.

Dated,

(Signed in ink)

(Name, place of business and address of the guarantor, and statement as to whether guarantor is corporation or copartnership.)"

The general guaranty must be acknowledged before a Notary Public and, where the guarantor is a corporation, must be accompanied by evidence of the authority of the person executing the guaranty, as agent or officer. Unless these requirements are complied with, the guaranty will not be filed.

The general guaranty will afford protection only as to packages bearing on the label the legend "Guaranteed by (name of guarantor) under the Food and Drugs Act, June 30, 1906," and the serial number given by the Secretary of Agriculture.

2. The *specific guaranty* must contain the name and address of the guarantor, an *itemized statement of the articles purchased*, and a statement that they are not misbranded, mislabeled or adulterated within the meaning of the California law. It must be in substantially the following form:

"The undersigned hereby guarantees that the articles of (drugs, foods, or liquors, as the case may be, specifying them), this day sold to (name of dealer) and mentioned in the attached invoice, are not adulterated, misbranded, or mislabeled, within the meaning of the California Pure Foods (or Drugs, as the case may be) Act, March 11, 1907.

Dated

.....
(Name, place of business and address of the guarantor, and statement as to whether guarantor is corporation or copartnership.)"

A convenient method of using the specific guaranty, which has been adopted by many manufacturers and wholesalers is to print or stamp the form on all invoices, and sign such invoices as they go out.

A convenient form for use in this manner is the following:

"The articles of foods (or drugs, as the case may be) listed in this invoice are guaranteed not to be adulterated, mislabeled or misbranded, within the meaning of the California Pure Foods (or Drugs, as the case may be) Act, March 11, 1907.

.....
(Name and address of guarantor with statement as to whether guarantor is corporation, partnership or individual.)"

The general guaranty is worthless unless it is filed with the Secretary of Agriculture. Given by the guarantor to the purchaser it affords no protection, for the reason that the act makes no provision for the prosecution of the guarantor in such a case.

Excepting as to goods covered by general guaranty, filed in Washington and bearing label with the legend and serial number, the purchaser will not be protected unless he has specific guaranty as above indicated, containing an itemized statement of the articles guaranteed.

Dealers from whom adulterated or misbranded goods are taken by inspectors, in order to protect themselves, must prove that the sample was guaranteed as required by the act. Such proof must be submitted to the State Board of Health at the hearing, or the case will be referred for prosecution. Where the guaranty is specific, it should be submitted, with a statement under oath that the sample taken is one of the articles mentioned in the itemized statement, and that the sample when taken was in exactly the same condition as when received by the dealer. Where the guaranty is general, a copy of the general guaranty on file with the Secretary of Agriculture, duly certified by him as correct, and a statement under oath that the sample when taken was in exactly the same condition as it was when received by the dealer should be submitted.

SPECIAL ANNOUNCEMENT.

Since the foregoing went to print a committee representing the wholesale grocers of the State has met with the Board and submitted the following suggestion:

That where desired the guarantor shall furnish to his customer a *general guaranty* covering all articles which may be sold to him, together with an agreement to the effect that a *specific guaranty*, covering any particular article or articles purchased from the guarantor, will be furnished to the customer upon demand. This arrangement contemplates that whenever a sample of goods purchased from the guarantor shall be taken up by an inspector, the dealer shall state the name of the

guarantor, and shall at once demand of the latter the specific guaranty to be used for the dealer's protection in case he is cited to appear before the State Board of Health for any violation discovered upon examination of the sample.

The Board has no objection to this plan, but it must be borne in mind that to afford himself any protection, the dealer must produce the specific guaranty at the hearing, must prove that the article described therein is the identical article taken as a sample, and that the sample when taken was in the same condition, as to label and ingredients, as it was when purchased from the guarantor. Under these circumstances, the specific guaranty may be given at any time before the hearing.

COATED RICE.

Several requests have been received at the laboratory with reference to the labeling of coated or polished rice. The ruling of the State Board of Health is in accordance with Food Inspection Decision 67. It must be understood by all dealers, etc., that all packages containing coated or polished rice must be properly labeled to the end that there must be nothing misleading or deceiving.

The following excerpt from the Decision is of interest in this connection:

It is the opinion of the Department that no coating of any kind can be used in the manner indicated if the product "be mixed, colored, powdered, coated, or stained in a manner whereby damage or inferiority is concealed." In each case whether or not such a result be secured is a question of fact to be decided by the evidence.

It is held by the Department that rice treated in the manner indicated above with glucose and starch should be labeled in all cases with the name of the extraneous substances, as

"COATED WITH GLUCOSE AND STARCH."

In such declarations all of the food substances used for coating should be mentioned. Any coloring matter or other substances that may be employed to change the tint of the rice should be declared on the label.

The question of the wholesomeness of paraffin, talc, or other non-food substances used is to be construed in such a way as to protect the health of those most susceptible to their influences. Rice is a diet often prescribed for those suffering from impaired digestion. The use of paraffin in such cases is at least of questionable propriety, and in the opinion of the Department it should be excluded from food products. Under the fifth provision of foods, section 7 of the food and drugs act, June 30, 1906, and under Regulation 14 the use of talc is permitted, provided that each package be plainly labeled with the name of this preservative and the proper directions for removal be given.

The following is a list of the persons accused, the foods found to be adulterated or mislabeled, and the nature of the offenses, which were included in the report of the Director of the State Laboratory to this Board on October 12, 1909. These persons were afforded an opportunity to be heard before this Board, as provided in said act, on November 6, 1909, and after such hearing, the findings of the Director being sustained, these cases were referred to the district attorneys of the several counties for prosecution:

Certificate No.	Material.	Violation.	Name of Dealer.	Locality.
689	Strawberry extract	Mislabeled. Coal-tar color	V. L. Geach	Los Angeles
690	Pineapple extract	Mislabeled. Coal-tar color	Junkin & Keeler	Garden Grove
691	Pastilles	Mislabeled. Coal-tar color	W. L. Tadlock	So. Pasadena
692	Raspberry extract	Mislabeled. Coal-tar color	Wright & Colburn	Upland
693	Wild cherry Syrup	Mislabeled. Coal-tar color	J. R. Newberry Co.	Los Angeles
694	Raspberry syrup	Mislabeled. Coal-tar color	Frank Johnson	Corona
695	Strawberry syrup	Mislabeled. Coal-tar color	F. W. Beckwith	Balboa
696	Orange nectar	Mislabeled. Coal-tar color	C. H. Lewis	Los Angeles
697	Pineapple syrup	Mislabeled. Coal-tar color	S. N. Lopex	San Fernando
698	Creme de Menth	Mislabeled. Coal-tar color	E. Knudson	Oxnard
699	Pistachio extract	Mislabeled. Coal-tar color	Albert Cohn	Los Angeles
700	Orangeade	Artificial color	Jacobson & Leland	Los Angeles
701	Orangeade	Artificial color	F. & R. C. Chambers	Los Angeles
703	Rexall headache powder	Mislabeled. Contains Acetanilid	J. E. Osborne	Sawtelle
704	Prepared Mustard	Mislabeled. Contains Turmeric	J. H. Simonton	Los Angeles
705	Prepared Mustard	Mislabeled. Contains Turmeric	J. F. Martin	Tustin
710	Chopped meat	Adulterated with sulphur dioxide	Schumacher & Schneider	Anaheim
711	Chopped meat	Adulterated with sulphur dioxide	Karl Klement	Anaheim
712	Salted codfish	Adulterated with boron compound	Lee R. Young	Ocean Park
717	Cider vinegar	Below standard acetic ash.	Geo. A. Edgar	Santa Ana
718	Cider vinegar	Below standard solids and mg.	Fred Nooman	Watts
719	Eggs	Cold storage. Mislabeled	Albert Cohn	Los Angeles
720	Butter	Below standard milk fat	Torre Bros.	San Francisco
721	Honey	Excess glucose	L. Peterson	San Bruno
724	Cider vinegar	Below standard ash, phosphoric acid	Earle & Co.	Palo Alto
728	Apple cider vinegar	Below standard ash, phosphoric acid.	P. J. O'Keefe	Menlo Park

DEPARTMENT OF BACTERIOLOGY.

DR. A. R. WARD, DIRECTOR.

RABIES IN CALIFORNIA.

For some time past a disease has existed among dogs in the vicinity of Pasadena and Los Angeles which in its symptomatology suggested rabies. Such a circumstance is of the greatest importance, because this disease has not hitherto been recognized in the State.

At the instance of Dr. Charles Keane, State Veterinarian, the Bureau of Animal Industry, United States Department of Agriculture, was requested to coöperate with the State officers in determining the identity of the reported cases. The request was complied with promptly by the assignment to duty at the State Hygienic Laboratory of Dr. George H. Hart, a recognized authority and writer upon this disease.

Recently several heads have been forwarded to the State Hygienic Laboratory for examination with respect to the microscopic changes characteristic of rabies. In the case of four of these specimens Negri bodies, the pathognomonic evidence of this disease, were found in the large nerve cells of the brain. The changes in the flexiform ganglia, described by Van Gehuchten and Nelis, were also found in three cases.

SHIPMENT OF MATERIAL TO THE LABORATORY.

It is sufficient for the laboratory examination to ship the head only, the neck being severed in the middle of the cervical region. Wrap in cloth and ship by express. It should be noted that the best results are obtained from cases in which the animal has died naturally or from those in which the symptoms are well developed. Animals destroyed in the early stages do not yield conclusive results.

NUMBER OF EXAMINATIONS MADE DURING OCTOBER.

The following examinations have been made during the month of October, 1909:

	Ex.-Pos.	Ex-Neg.	Total.
Diphtheria	2	28	30
Malaria	--	3	3
Tuberculosis	3	12	15
Typhoid	5	9	14
Water	--	--	--
*Miscellaneous	--	--	11
Total			73

* This list includes several examinations for Negri bodies in dog brains, and a number of determinations of species of intestinal worms. This class of examinations is increasing and should be met by adequate provisions for prompt returns.

Hereafter the department will report positive examinations in quarantinable diseases to the County Health Officer, as well as to the physician who may send in cultures for examination.

DEPARTMENT OF EPIDEMIOLOGY.

WILLIAM F. SNOW.

Five outbreaks of smallpox have occurred during the month, but have been promptly controlled by the local authorities.

Scarlet fever and diphtheria have interfered with the regular work of nine school districts.

Measles appeared in a very virulent form in the Russian colony of one city.

Three cases of pellagra were reported in one county hospital, but the cases are believed to have developed before coming to this State.

The Federal officers have continued the "scouting" work of delineating the areas of plague infection among squirrels. Hunters are now scouting as far south as Visalia and eastward to the Sierra Nevada range. The administrative details of directing these operations over a territory 500 miles in length, and the transportation problems of sending squirrels and other animals to the central laboratories are perplexing and without precedent.

The State Sanitary Inspectors have been detailed largely to a study of the surface water supplies of the great valleys. The long delayed rains have presented an unusual opportunity to get valuable data on the pollution of these water courses. The work will be continued during the winter.

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LIST OF COUNTY HEALTH OFFICERS.

<i>County.</i>	<i>Health Officer.</i>	<i>Address.</i>
Alameda	Dr. C. L. McKown.....	Niles
Alpine		
Amador	Dr. E. E. Endicott.....	Jackson
Butte	Dr. J. E. Knauss.....	Oroville
Calaveras	Dr. E. W. Weirich.....	Angels Camp
Colusa	Dr. W. T. Rathbun.....	Colusa
Contra Costa	Dr. J. Wallace DeWitt.....	Antioch
Del Norte		
El Dorado	Dr. S. H. Rantz.....	Placerville
Fresno	Dr. G. L. Long.....	Fresno
Glenn	Dr. J. A. Randolph.....	Willows
Humboldt	Dr. J. H. Mallery.....	Eureka
Imperial	Dr. E. E. Patten.....	Imperial
Inyo	Dr. I. J. Woodin.....	Independence
Kern	Dr. W. S. Fowler.....	Bakersfield
Kings	Dr. W. H. Miller.....	Hanford
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